



**PLAN OF OPERATIONS
FOR
BLOSSOM PAD CONSTRUCTION AND GAS
EXPLORATION DRILLING**

**OCTOBER 2014
REVISION 1**

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TABLE OF CONTENTS

1.0	Introduction	1
1.1.	Project Description	1
1.2.	Authorizations Required.....	3
1.3.	Project Schedule	3
2.0	General Operations.....	3
3.0	Environmental, Health, and Safety Training	3
4.0	Contingency Plans	4
4.1.	Wildlife Interaction Plan	4
4.2.	Spill Prevention, Control and Countermeasure Plan.....	4
5.0	Local Hire and Community Relations	4
6.0	Mitigation Measures.....	5
7.0	Rehabilitation Plan	5

LIST OF FIGURES

Figure 1	Blossom Pad Location Map – Ninilchik Unit Boundary and Associated Leases
Figure 2	Blossom Pad and Access Road Layout with Land Ownership
Figure 3	Saxon Typical Rig Layout
Figure 4	Saxon Typical Safety Equipment Layout

ATTACHMENTS

Attachment 1 Mitigation Measures Analysis for Blossom Pad Construction and Gas Exploration Drilling



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1.0 INTRODUCTION

Hilcorp Alaska, LLC (Hilcorp) submits this Plan of Operations for approval from the Alaska Department of Natural Resources (ADNR) Division of Oil & Gas (DOG) to construct a new gravel pad, Blossom Pad, north of Ninilchik, Alaska, and drill up to two gas exploration wells. The proposed pad location is just outside of the Ninilchik Unit boundaries, but potential gas targets will be within the Ninilchik Unit. Figure 1 shows the Blossom Pad location relative to the Ninilchik Unit boundaries and associated subsurface leases, and Figure 2 shows the Blossom Pad location and surface land ownership. Hilcorp will use the pad to drill one to two exploratory wells and eventually achieve gas production, depending upon the results from exploration drilling. The entire project will occur on privately owned surface land. The pad is located within Section 14, Township 1 North, Range 13 West, Seward Meridian, Alaska, and the approximate pad center is located at latitude 60.172569 and longitude -151.475177 (NAD83).

1.1. Project Description

Construction of Blossom Pad will allow for directional exploration well drilling into the shallow gas targets located beneath Cook Inlet and potential increased gas production within the Ninilchik Unit. If commercially viable gas is found during exploration drilling, Hilcorp will determine the most feasible plan for bringing Blossom wells to production, which may be to tie the wells into existing production facilities located on the Hilcorp-operated Grassim Oskolkoff (GO) Pad.

Pad Location Selection

Within the Ninilchik Unit, subsurface, surface, potential field, and seismic data all indicate that the potential gas-productive structure lies primarily underneath Cook Inlet. In order to avoid offshore drilling within this unit, directional drilling from onshore gravel pads is preferred. New pad construction is required to reach the gas targets between the GO and the Bartolowits pads, within **ADL 389737** and other non-state target leases. These targets cannot be accessed from existing Ninilchik Unit pads due to well geometry considerations. Pad placement is also limited by surface ownership, area topography, and wetland locations.

Pad and Access Road Construction

The proposed approximately 300-foot by 400-foot (2.8 acres) gravel pad will be constructed northeast of GO Pad and will use an existing access road to link south to the Sterling highway. A new section of road (approximately 1 acre) will be constructed to tie the existing access road to the highway away from nearby residences (Figure 2). The existing access road will be improved by fortifying low-lying sections with new gravel within the existing footprint.

Construction activities will include clearing and grubbing existing vegetation, placement of geotextile liner on the cleared land within the pad footprint, and placement of approximately 20,000 cubic yards (cy) of gravel fill over the liner. Gravel fill will be compacted and a 2-foot containment berm will be built around the edge of the pad. The new section of access road will require 3,000 cy of fill, and an estimated 2,800 cy of gravel will be used to fortify the existing portion of the access road within the current road footprint.

Hilcorp conducted wetlands, eagle nest, and archaeological field surveys in the project area in September 2014. The proposed pad and road will have no impact to wetlands or archaeological/cultural resources. There were also no eagle nests observed in the area. Additionally, no Steller's eiders were observed.



Drilling and Well Testing

Hilcorp plans to drill up to two exploration wells to evaluate the commercial viability of Ninilchik Unit gas reservoirs. The wells will be drilled from the proposed Blossom Pad. Well #1 will be drilled with a northwest trajectory to a measured depth of approximately 11,750 feet and a vertical depth of approximately 8,300 feet. The well will produce from and terminate in state lease **ADL 389737**, with the bottom hole location within section 11 or Township 1N and Range 13W, Seward Meridian. Hilcorp currently anticipates Well #2 will also produce from and terminate in ADL 389737; however, the Well #2 bottom hole location may change depending upon the final trajectory and target determination, which will be based on information gained by drilling Well #1. After drilling is completed, each well will be tested and if one or both of the wells are determined to have commercially viable gas, Hilcorp will finalize plans for gas development and production from Blossom Pad.

Drilling activities will be conducted by Saxon Drilling under the direction of Paul Mazzolini, Hilcorp's Drilling Manager (907-777-8369). Figures 3 and 4 show typical layouts for Saxon's rig and associated equipment. Major components include the following:

- Drill rig and pipe
- Boilers
- Mud tanks and mud pumps
- Rig Generator
- 5,000-gallon fuel tank
- Work trailers for supervisory and support staff
- Light plants

Approximately 100 barrels (bbls) per day of freshwater will be used for drilling each gas well. Hilcorp is submitting an application for authorization to drill and use a water well on Blossom Pad. One or more existing Alaska Department of Natural Resources (ADNR)-permitted wells may also be used. Drilling crews will be housed at an offsite drilling camp or other offsite lodging. Equipment, including the drilling rig, drilling foreman/expeditor/toolpusher trailer, light plants, generators, cement silo(s), and diesel fuel storage (~5,000-gallon tank) for equipment refueling, will be onsite temporarily to support drilling efforts.

Well testing will be conducted for approximately 7 days for each well. The temporary testing equipment will include a line heater, liquids/gas separator, flare, and 400-bbl water storage tank. Waste will be handled consistent with Hilcorp waste management practices as outlined below:

- Waste will be properly segregated and containers labeled to ensure proper disposal.
- Closed-top dumpsters will be onsite for food trash and household waste and will be hauled away from the site regularly to prevent overfilling.
- Household waste/paper trash will be sent to the Kenai Peninsula Borough Landfill for disposal.
- Oily waste will be segregated and sent to a specialty waste contractor for offsite disposal.
- Waste drilling mud and cuttings will be hauled via vacuum truck or supersucker directly from the rig process tank to an offsite, permitted underground injection disposal facility. The only anticipated storage of drilling waste on location would be in the event of an issue at the disposal facility that prevented immediate shipment, in which case Hilcorp would obtain Alaska Department of Environmental Conservation (ADEC) Temporary Drilling Waste Storage plan approval.



- Produced water tanks will be routinely emptied and produced water hauled offsite for underground injection.

1.2. Authorizations Required

Hilcorp is seeking authorization from ADNR's DOG through submittal of this Plan of Operations. The pad is on privately owned land, which Hilcorp uses under an agreement with the land owner. Hilcorp will provide a copy of this Plan of Operations to the land owner, in accordance with Cook Inlet Mitigation Measure 1a. In addition, the following authorizations will be obtained as needed:

- ADEC Minor General 1 Air Quality Control Permit for Oil or Gas Drilling Rigs
- ADEC Temporary Drilling Waste Storage Permit (if needed)
- ADNR Temporary Water Use Authorization (TWUA) for on-pad water well (Hilcorp is submitting an application for authorization to drill and utilize a water well on Blossom Pad); other offsite permitted water wells may also be used to supply water, if needed
- Alaska Oil and Gas Conservation Commission (AOGCC) permits to drill and sundry approvals
- State Historic Preservation Office (SHPO) consultation for a no historic properties affected finding
- Federal Aviation Administration (FAA) Aeronautical Hazard Evaluation for Drill rig derrick

1.3. Project Schedule

This project is scheduled to begin December 15, 2014. Pad and access road construction is anticipated to take approximately three weeks to complete. Drilling Blossom exploratory Well #1 is planned for January 2015 and an additional exploration well may be drilled in first quarter 2015 or later, depending upon results from the first well.

2.0 GENERAL OPERATIONS

Hilcorp is the operator for all activities associated with Ninilchik Unit gas production facilities. Hilcorp's main office is in Anchorage, Alaska, at 3800 Centerpoint Drive, Suite 1400. Blossom Pad will not be a manned facility, but will be monitored by personnel staged out of the Ninilchik Unit Susan Dionne Pad. The table below provides contact information for key project personnel.

Key Project Personnel

Name	Title	Company	Contact Phone Number
Dean Gardner/Dave Kerkvliet	Lead Operators	Hilcorp	907-283-1380
Pete Iverson/Joey Hensley	Production Foremen	Hilcorp	907-283-1325/283-1364
Taylor Nasse	Facility Engineer	Hilcorp	907-777-8354
Kelley Nixon	Environmental Coordinator	Hilcorp	907-777-8335

3.0 ENVIRONMENTAL, HEALTH, AND SAFETY TRAINING

Hilcorp is committed to providing for the continued health and safety of employees and contractors and being good stewards of the environment. Hilcorp employees and project contractors undergo an environmental, health, and safety (EH&S) orientation program that addresses the following, among other topics:

- Environmental, social, and cultural features of the operating area;



- Importance of not disturbing archaeological and biological resources and habitats;
- Overview of local community customs, values, lifestyles, and subsistence activities;
- Training for spill prevention and reporting;
- Wildlife interaction and avoidance training; and
- General health and safety overview.

In addition to the general EH&S orientation program, individuals are trained according to job-specific requirements, such as drilling operations and construction equipment operations. During construction activities, daily safety briefings are conducted to ensure site- and task-specific EH&S considerations are taken.

4.0 CONTINGENCY PLANS

Multiple contingency plans guide Hilcorp operations. The following subsections provide a brief summary of them.

4.1. Wildlife Interaction Plan

Hilcorp implements a Human-Bear Interaction Plan for all operations. The plan describes procedures for minimizing potential human-bear interactions at Hilcorp facilities and guidance for reporting bear sightings and interactions. Hilcorp policy is to apply these requirements to all of the Cook Inlet area land-based facilities to minimize human-bear interactions at every facility. The purpose of the plan is to establish procedures that will reduce risks to both humans and bears. The Bear Interaction Plan objectives are as follows:

- Prevent bears from associating humans and facilities with food;
- Prevent human-bear interactions;
- Protect both workers and bears; and
- Implement reporting procedures.

As part of the EH&S training program described in Section 3.0, all personnel will be instructed not to interact with or feed wildlife. Pad layout is designed to allow proper storage and management of waste. Training in wildlife interactions will serve to minimize the disturbance of wildlife and increase worker safety.

4.2. Spill Prevention, Control and Countermeasure Plan

Ninilchik Unit gas production facility operations comply with the applicable state and local requirements for oil spill prevention, preparedness, and response. The facility is incorporated into Hilcorp's *Spill Prevention, Control, and Countermeasure (SPCC) Plan – Ninilchik Area*. Additionally, Saxon Drilling operates under a drilling rig-specific SPCC Plan.

5.0 LOCAL HIRE AND COMMUNITY RELATIONS

Hilcorp employees are actively engaged with regulators and stakeholders on all activities within the state. Hilcorp community outreach to date has included presentations to the Kenai Chamber of Commerce, the Alaska Support Industry Alliance, the Anchorage Chamber of Commerce, and the Cook Inlet Regional Citizens Advisory Council. Hilcorp has also participated in Ninilchik Natives Association, Inc. (NNAI)



board meetings to present project updates. Recently, Hilcorp hosted a public meeting in Ninilchik on October 9, 2014.

Hilcorp's Alaska-based External Affairs Manager ensures that Hilcorp remains in open communication with stakeholders, regulators and the general public in Alaska. Hilcorp will continue to keep community members informed of planned activities by bulk mailings, posting targeted informational flyers in local information repositories (e.g., post offices), and evaluating projects on a case-by-case basis to hold public meetings.

More than 95 percent of Hilcorp's workforce is comprised of Alaskan residents. Hilcorp works with local organizations, such as the Alaska Support Industry Alliance and the Kenai Peninsula Economic Development District, to encourage growth in the local service sector. While not all contracted services are awarded to local/in-state providers, Hilcorp strives to do business locally whenever possible. To the extent they are available and qualified, locally based contractors will provide construction support for this and other projects.

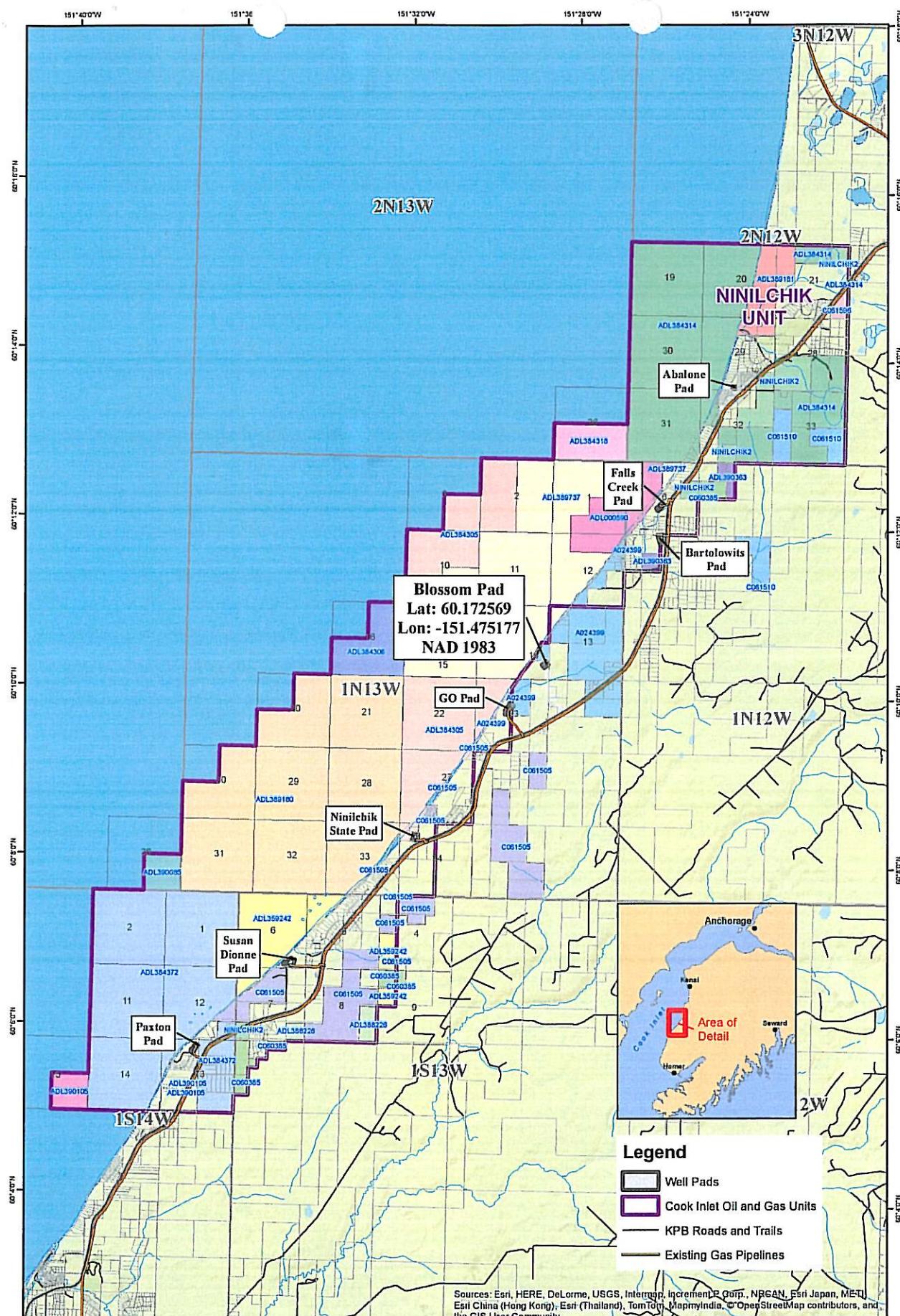
6.0 MITIGATION MEASURES

A mitigation measure analysis is attached to this Plan of Operations, per ADNR DOG requirements for lease Plan of Operations approval.

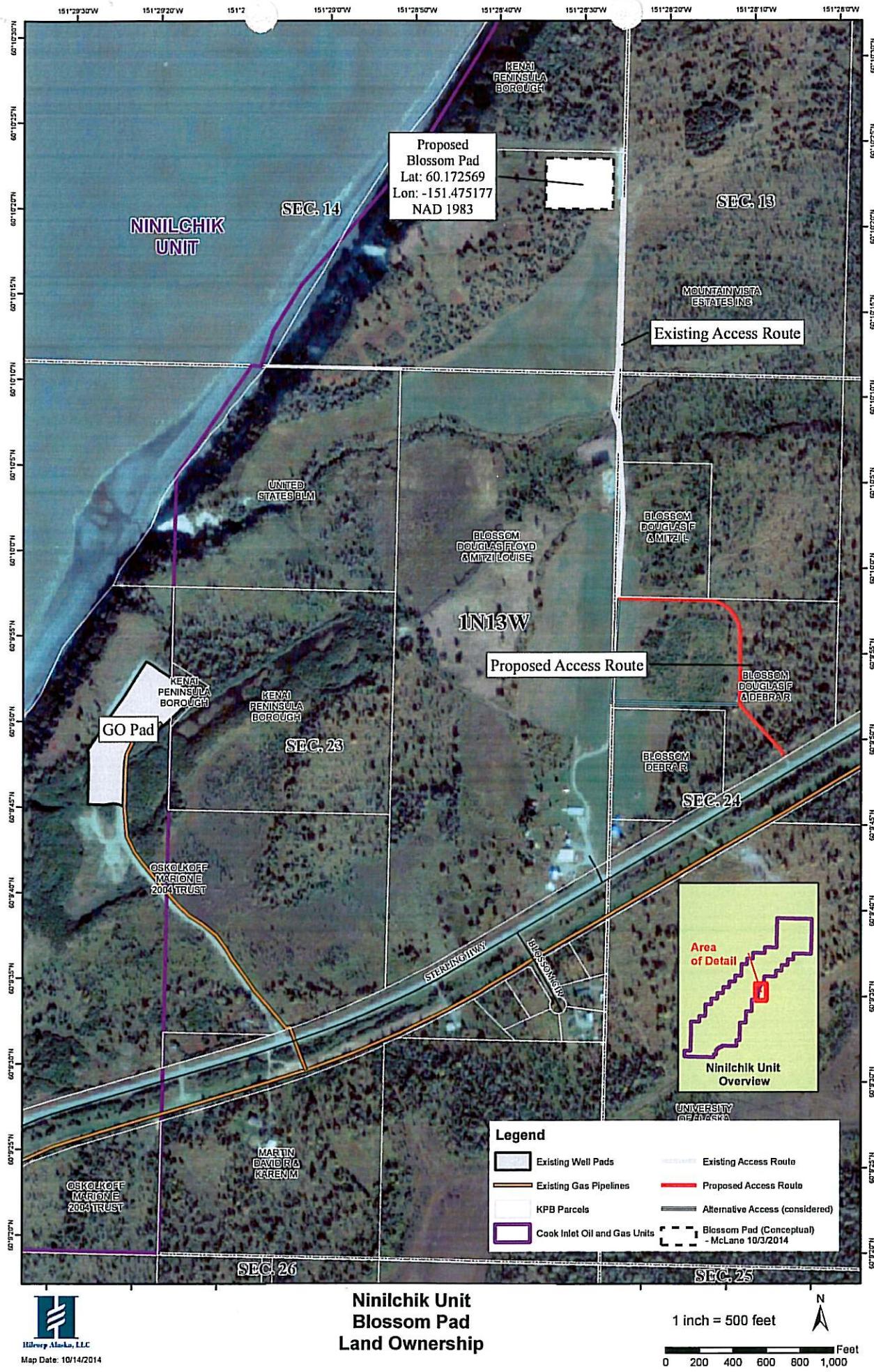
7.0 REHABILITATION PLAN

Any facility infrastructure will be removed from Blossom Pad when the facility is decommissioned. After the field is no longer producing, the pad will be cleaned and reclaimed to the satisfaction of the surface landowner and in compliance with applicable laws and regulations.

FIGURES



**Ninilchik Unit Boundary
and Associated Leases**



Hilcorp Alaska, LLC

Map Date: 10/14/2014

Ninilchik Unit Blossom Pad Land Ownership

ATTACHMENT 1
MITIGATION MEASURES ANALYSIS
BLOSSOM PAD CONSTRUCTION AND GAS EXPLORATION
DRILLING

MITIGATION MEASURE ANALYSIS: COOK INLET

The following instructions are provided for guidance to adequately complete the Mitigation Measure Analysis form.

1. The applicant shall respond to each Mitigation Measure, and all subsets of mitigation measures; i.e. A.2.d.i should be addressed and A.2.d.ii, and so forth.
2. The applicant's response shall begin by clearly indicating if the mitigation measure is satisfied, a waiver is requested, or if the mitigation measure is not applicable.
3. The applicants' response shall then address how the proposed project clearly satisfies the mitigation measure, meets the intent of the mitigation measure, is not practicable, or is not applicable.
4. The applicant shall verify working 'in consultation with' parties other than Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) by reporting meeting dates and parties present for Mitigation Measures which require consultation with parties other than DNR, DO&G; i.e. Mitigation Measure 1.b.

Please note that this form, along with the Plan of Operations Application form and the Plan of Operations, must be adequately completed before DNR DO&G will review an application for potential approval.

Cook Inlet	A. Mitigation Measures	Company Response
1. Facilities and Operations		
	a. A plan of operations must be submitted and approved before conducting exploration, development or production activities, and must describe the lessee's efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments and subsistence use areas, and adjacent private lands. At the time of application, lessee must submit a copy of the proposed plan of operations to all surface owners whose property will be entered.	A.1.a. Mitigation measure satisfied: A Plan of Operations is included with this Mitigation Measures Analysis. The project will occur on privately owned land. Hilcorp uses the land under an agreement with the land owner and will provide a copy of the Plan of Operations to the owner. The nearest residential property is located approximately 0.7 miles to the south. The development will have no impact to residential, commercial, subsistence, or recreational areas.
	b. Facilities must be designed and operated to minimize sight and sound impacts in areas of high residential, commercial, recreational, and subsistence use and important wildlife habitat. Methods may include providing natural buffers and screening to conceal facilities, sound insulation of facilities, or by using alternative means approved by the director, in consultation with ADF&G.	A.1.b. Mitigation measure satisfied: The project is not located in an area of high residential, commercial, recreational, or subsistence use, nor is the project area within important wildlife habitat. Residential users are more than ½-mile from the proposed pad location. At the landowner's request and to minimize impacts to nearby residences, a new section of road will be constructed to tie the existing access road to the highway away from the residences. Drilling and well testing work is temporary. Sound impacts will be temporary and will only occur during construction and drilling. Sight impacts will be mitigated by leaving trees surrounding the pad area to the extent practicable.
	c. The siting of onshore facilities, other than roads, docks, utility or pipeline corridors, or terminal facilities will be prohibited within one-half mile of the mean high water of Cook Inlet, except where land use plans classify an area for development, or established usage and use history show development. The siting of facilities other than docks, roads, utility, and pipeline crossings will also be prohibited within 500 feet of all fish bearing streams and waterbodies and 1,500 feet of all current surface drinking water sources. Additionally, to the extent practicable, the siting of facilities will be prohibited within one-half mile of the banks of the main channel of the Harriet, Alexander, Lake, Deep, and Stariski creeks, and the Drift, Big, Kustatan, McArthur, Chuitna, Lewis, Theodore, Beluga, Susitna, Little Susitna, Kenai, Kaslof, Ninilchik, and Anchor rivers. Facilities may be sited within these buffers if the lessee demonstrates to the satisfaction of the director, in consultation with ADF&G, that site locations outside these buffers are not practicable or that a location inside the buffer is environmentally preferred. Road, utility, and pipeline crossings must be consolidated and aligned perpendicular or near perpendicular to watercourses.	A.1.c. Mitigation Measure waiver is requested: The proposed Blossom pad will be located within one-half mile of the mean high water of Cook Inlet. The coastline near Ninilchik, Alaska has multiple active gas production facilities. Blossom Pad is sited approximately one mile from Grassim Oskolkoff (GO) Pad, the nearest active gas production facility. Gas exploration and production is an established land usage in the Ninilchik area. During drilling, temporary fuel tanks and produced water storage tanks will be placed within lined, bermed secondary containment areas to reduce risk of an off-pad release. In addition, the pad will be constructed with a 2-foot berm around the entire pad perimeter to further reduce risk of hydrocarbon-impacted runoff. Proposed activities at Blossom Pad will not affect Cook Inlet or access to Cook Inlet recreation areas. Blossom pad is not sited within the remaining buffer areas specified in this mitigation measure.

<p>d. Impacts to identified wetlands must be minimized to the satisfaction of the director, in consultation with ADF&G and ADEC. The director will consider whether facilities are sited in the least sensitive areas. Further, all activities within wetlands require permission from the U.S. Army Corps of Engineers.</p>	<p>A.1.d. Mitigation measure satisfied: Hilcorp conducted a wetlands field survey in the project area in September 2014. The Blossom Pad and access road locations were selected to avoid placement of fill in wetlands in the area.</p>
<p>e. Exploration activities must be supported by air service, an existing road system or port facility, ice roads, or by off-road vehicles that do not cause significant damage to the vegetation or ground surface. Construction of temporary drill pads, airstrips, and roads may be allowed. Construction of permanent roads may be allowed upon approval by the director. Unrestricted surface travel may be permitted by the director and DMLW, if an emergency condition exists.</p>	<p>A.1.e. Mitigation measure satisfied: Up to two exploration wells will be drilled on the site, which is privately owned, and will be supported by the construction of a gravel access road, most of which is along an existing access road corridor to the Sterling Highway. Hilcorp anticipates eventual conversion of the exploration wells to producing gas wells.</p>
<p>f. With the exception of drill pads, airstrips, and roads permitted under A1e, exploration facilities must be consolidated, temporary, and must not be constructed of gravel. Use of abandoned gravel structures may be permitted on a case-by-case basis.</p>	<p>A.1.f. Mitigation measure satisfied: The project will be constructed on privately owned land. See response A.1.e.</p>
<p>g. Pipelines must utilize existing transportation corridors and be buried where conditions permit. Pipelines and gravel pads must be designed to facilitate the containment and cleanup of spilled fluids. Pipelines, flowlines, and gathering lines must be designed and constructed to assure integrity against climatic conditions and geologic hazards.</p> <p>In areas with above ground placement, pipelines must be designed, sited, and constructed to allow for the free movement of wildlife. Where practicable, pipelines must be located on the upslope side of roadways and construction pads, unless DMLW determines that an alternative site is environmentally acceptable.</p>	<p>A.1.g. Mitigation measure satisfied: The gravel pad will have a 2-foot containment berm around the pad perimeter.</p> <p>At this time, pipelines are not part of the proposed project. If commercially viable gas is found during exploration drilling, Hilcorp would eventually bring Blossom wells to production and tie the wells into existing production facilities located on the Hilcorp-operated GO Pad. Pipeline design would occur when the wells are converted from exploration to development.</p>
<p>h. Pipelines that must cross marine waters will be constructed beneath the marine waters using directional drilling techniques, unless the director, in consultation with ADF&G and the local borough and Coastal Resource Service Areas, approves an alternative method based on technical, environmental, and economic justification. Offshore pipelines must be located and constructed to prevent obstruction to marine navigation and fishing operations.</p>	<p>A.1.h. Mitigation measure not applicable: Project does not include pipeline construction across marine waters.</p>

<p>i. Gravel mining sites required for exploration and development activities will be restricted to the minimum necessary to develop the field efficiently and to minimize environmental damage. Gravel mine sites required for exploration activities must not be located within an active floodplain of a watercourse unless DMLW, after consultation with ADF&G, determines that there is no practicable alternative, or that a floodplain site would be compatible with fish and wildlife habitat after mining operations are completed and the site is closed.</p>	<p>A.1.i. Mitigation measure not applicable: Gravel required for pad and access road construction will be obtained from offsite, commercial sources.</p>
<p>2. Habitat, Fish, and Wildlife</p>	<p>a. Detonation of explosives will be prohibited in open water areas of fish bearing streams and lakes. Explosives must not be detonated beneath, or in close proximity to, fish-bearing streams and lakes if the detonation of the explosive produces a pressure rise in the water body of greater than 2.7 pounds per square-inch, or unless the water body, including its substrate, is solidly frozen. Detonation of explosives within or in close proximity to a fish spawning bed during the early stages of egg incubation must not produce a peak particle velocity greater than 0.5 inches per second. Blasting criteria have been developed by ADF&G and are available from ADF&G upon request. The location of known fish bearing waters within the project area can be obtained from ADF&G.</p> <p>b. Compaction or removal of snow cover overlying fish bearing water bodies is prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, ice and/or snow bridges may be required.</p> <p>c. Removal of water from fishbearing rivers, streams and natural lakes shall be subject to prior written approval by DMLW and ADF&G. Water intake pipes used to remove water from fish bearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement. Screen mesh size shall be no greater than 1 mm (0.04 inches), unless another size has been approved by ADF&G. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.4 feet per second, unless an alternative velocity has been approved by ADF&G. Screen material must be corrosion resistant, and must be adequately supported to prevent excessive sagging which could result in unusable intake surface. The intake structure must be designed and installed to avoid excessive fouling from floating debris, and a minimum of eight square feet of effective wetted screen surface must be provided for each multiple of a 450-gallon per minute (one cubic foot per second) pumping rate. The pump intake opening must be placed equidistant from all effective wetted screen surfaces.</p>

<p>d. Surface entry will be prohibited in parcels that are within the Kenai River Special Management Area.</p> <p>Surface entry, other than access, will be prohibited on state lands within the Kenai National Wildlife refuge.</p> <p>Lessees are prohibited from placing drilling rigs and lease-related facilities and structures within an area near the Kenai River composed of: all land within Section 36 in T6N, R11W that is located south of a line drawn from the protracted NE corner to the protracted SW corner of the section; all land within the western half of Section 31 in T6N, R10W and Section 6 in T5N, R10W; and all land within Section 1 in T5N, R11W.</p>	<p>A.2.d. Mitigation measure not applicable: The project area is not within the Kenai River Special Management Area, the Kenai National Wildlife Refuge, or near the Kenai River.</p>
<p>e. Surface entry into the critical waterfowl habitat along the Kasilof River is prohibited. Directional drilling from adjacent sites may be allowed.</p> <p>f. Surface entry will be prohibited within one-quarter mile of trumpeter swan nesting sites between April 1 and August 31. The siting of permanent facilities, including roads, material sites, storage areas, powerlines, and above ground pipelines will be prohibited within one-quarter mile of known nesting sites. Trumpeter swan nesting sites will be identified by ADF&G at the request of the lessee.</p>	<p>A.2.e. Mitigation measure not applicable: The project area is not near the Kasilof River.</p> <p>A.2.f. Mitigation measure satisfied: There are no known trumpeter swan nesting sites in the area, and none were observed during September 2014 field surveys.</p>
<p>g. The director, in consultation with ADF&G, shall restrict or modify lease related activities if scientific evidence documents the presence of Steller's eiders from the Alaska breeding population in the lease area and it is determined that oil and gas exploration and development will impact them or their over-wintering habitat in the near-shore waters of Cook Inlet.</p> <p>h. The director, in consultation with ADF&G, may impose seasonal restrictions on activities located in and adjacent to important waterfowl and shorebird habitat during the plan of operations approval stage.</p>	<p>A.2.g. Mitigation measure satisfied: Steller's eiders are known to overwinter offshore from the pad location, on Cook Inlet waters. Proposed activities are onshore, landward of the bluff, and do not have high risk of hydrocarbon releases to the inlet. Impacts to Steller's eider or other waterfowl species or their nearshore overwintering habitats are not anticipated. No Steller's eiders were observed during the September 2014 field surveys.</p> <p>A.2.h. Mitigation measure not applicable: The Clam Gulch Critical Habitat Area runs along the coastline adjacent to the bluff on which the Ninilchik Unit pads, including Blossom pad, are sited. All project activities will occur landward of the bluff and will not impact the CGCHA or other important waterfowl and shorebird habitat.</p>

Bears: <ul style="list-style-type: none"> i. Lessees are required to prepare and implement a human-bear interaction plan designed to minimize conflicts between bears and humans. The plan shall include measures to: <ul style="list-style-type: none"> i. minimize attraction of bears to facility sites, including garbage and food waste; ii. organize layout of buildings and work areas to minimize interactions between humans and bears such as including the use of electric fencing; iii. warn personnel of bears near or on facilities and the proper actions to take; iv. if authorized, deter bears from the drill site; v. provide contingencies in the event bears do not leave the site; vi. provide for proper storage and disposal of materials that may be toxic to bears; and vii. document and communicate the sighting of bears onsite or in the immediate area to all shift employees. 	<p>A.2.i. Mitigation measure satisfied: Hilcorp has a Human-Bear Interaction Plan in place. Hilcorp policy is to require best management practices that minimize attractants to bears and other wildlife. EH&S training conducted for site workers will include training for wildlife interactions.</p> <p>A.2.i.i. Section 2a of the Human-Bear Interaction Plan describes food and waste management procedures that help eliminate the potential for bears to associate humans and facilities with food.</p> <p>A.2.i.ii. Facility operators will visually scan the pad for the presence of bears before getting out of their vehicle or exiting a structure.</p> <p>A.2.iii. Sections 2b and 2c of the Human-Bear Interaction Plan describe notification procedures for bear sighting at or near a facility.</p> <p>A.2.iv. Section 2c of the Human-Bear Interaction Plan describes bear deterrence activities for Hilcorp.</p> <p>A.2.v. Section 2c of the Human-Bear Interaction Plan describes procedures for sighting communication and bear deterrence; if a bear is encountered at the site and the bear will not leave the site, work will cease until measures are taken for work to continue safely.</p> <p>A.2.i.vi. Storage and handling of materials will be such that materials are not left exposed to bears.</p> <p>A.2.i.vii. Sections 2b and 2c of the Human-Bear Interaction Plan describe notification and documentation procedures for bear sightings at or near a facility.</p>	<p>A.2.j. Mitigation measure not applicable: Site access is via existing roads and there are no known bear den areas located near the facility. The Human-Bear Interaction Plan includes procedures to report bear dens discovered during project activities.</p> <p>j. Before commencement of any activities, lessees shall consult with ADF&G to identify the locations of known bear den sites that are occupied in the season of proposed activities. Exploration and development activities started between November 15 and March 31 may not be conducted within one-half mile of known occupied brown bear dens, unless alternative mitigation measures are approved by the ADF&G. A lessee who encounters an occupied den not previously identified by ADF&G must report it to the Division of Wildlife Conservation, ADF&G, within 24 hours. Mobile activities shall avoid such discovered occupied dens by one-half mile unless alternative mitigation measures are approved by DO&G with concurrence from ADF&G. Non-mobile facilities will not be required to be relocated.</p>
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<p>k. Recognizing the importance of sufficient vegetative cover and access by Kenai Peninsula brown bears feeding at streams, the director, in consultation with ADF&G, may require lessees to locate exploration and development facilities beyond the 500-foot buffer along anadromous streams during the plan of operations approval stage, except as provided in A1c.</p>	<p>A.2.k. Mitigation measure not applicable: The facility is not located within 500 feet of an anadromous stream.</p>
<p>Caribou:</p> <ul style="list-style-type: none"> i. Surface entry within the core calving area of the Kenai Lowlands Caribou Herd is prohibited, except that surface entry for seismic exploration will be allowed from October 16 to March 31. 	<p>A.2.l. Mitigation measure not applicable: Project area is not located within the Kenai Lowlands Caribou Herd core calving area.</p>
<p>m. Exploration and development activities will be restricted or prohibited between April 1 and October 15 within the core summer habitat of the Kenai Lowlands Caribou Herd, except that maintenance and operation of production wells will be allowed year-round. Permanent roads, or facilities other than production wells, will also be restricted or prohibited within this area. Facilities within the core summer habitat of the Kenai Lowlands Caribou Herd that require year-round access must be located in forested areas, where practical.</p>	<p>A.2.m. Mitigation measure not applicable: Project area is not located within the Kenai Lowlands Caribou Herd summer habitat area.</p>
<p>n. Pipelines must be buried within the core summer habitat of the Kenai Lowlands Caribou Herd.</p>	<p>A.2.n. Mitigation measure not applicable: Project area is not located within the Kenai Lowlands Caribou Herd summer habitat area.</p>
<p>o. The director, in consultation with ADF&G, may impose seasonal restrictions on activities located in, or requiring travel through or overflight of, important moose or caribou calving and wintering areas during the plan of operations approval stage.</p>	<p>A.2.o. Mitigation measure satisfied: Potential for seasonal restrictions is noted.</p>
<p>Beluga Whales:</p> <ul style="list-style-type: none"> p. No permanent or temporary oil and gas exploration or development may occur within High Value/High Sensitivity (Type 1) beluga whale habitat areas, unless it occurs on upland areas (above Mean Higher Water datum). Type 1 habitat areas include the following tracts: 320-334, 391-409, 410, 462, 464-475, 476-481, 483, 484, 485, 486, 493, 494, 497, 498, 522, 524-537, 538, 539, 540, 541, 542, 543, 544, 547-552, 559, 575-577, 579, 581, 582, 585, 586, 590, 593, 594, 598, 616-618, 620-623, 627, 655-658, and 662. 	<p>A.2.p. Mitigation measure not applicable: Project is not located within and has no impact on Cook Inlet beluga whale habitat, including type 1, 2 and 3 critical habitat areas.</p>

<p>q. The director will assess oil and gas-related activities within all High Value (Type 2) beluga whale habitat areas on a case-by-case basis. No permanent surface entry or structures are allowed, and temporary activities and structures, for example exploration drilling, will only be allowed between November 1 and April 1 of each year, unless it occurs on upland areas, within the following tracts: 021, 022, 126, 127, 129-132, 161, 162, 175, 177, 211, 218, 257, 301, 302, 373, 376, 377, and 384.</p> <p>r. The director will assess oil and gas-related activities within the remaining tracts (Type 3 habitat areas) on a case-by-case basis.</p>	<p>A.2.q. Mitigation measure not applicable: Project is not located within and has no impact on Cook Inlet beluga whale habitat, including type 1, 2 and 3 critical habitat areas.</p> <p>A.2.r. Mitigation measure not applicable: Project is not located within and has no impact on Cook Inlet beluga whale habitat, including type 1, 2 and 3 critical habitat areas.</p>
<h3>3. Subsistence, and Other Fish and Wildlife Uses</h3>	<p>A.3.a. Mitigation measure satisfied: Project is located on private land, near existing gas production facilities, and will have no impact to subsistence and other fish and wildlife uses. The potential for restrictions is noted.</p> <p>a. Lease-related use will be restricted when DO&G determines it is necessary to prevent unreasonable conflicts between lease-related activities and subsistence, and commercial, sport, personal use, and educational harvest activities. In enforcing this term DO&G, during review of plans of operation, will consult with other agencies, the affected local borough(s) and the public to identify and avoid potential conflicts. In order to avoid conflicts with subsistence, commercial, sport and educational harvest activities, restrictions may include alternative site selection, requiring directional drilling, seasonal drilling restrictions, and other technologies deemed appropriate by DO&G.</p>
<h3>4. Fuel, Hazardous Substances, and Waste</h3>	<p>A.4.a. Mitigation measure satisfied: All fuel and other hazardous substances will have impermeable secondary containment.</p> <p>a. Secondary containment (see definitions) shall be provided for the storage of fuel or hazardous substances.</p> <p>b. Containers with an aggregate storage capacity of greater than 55 gallons which contain fuel or hazardous substances shall not be stored within 100 feet of a waterbody, or within 1,500 feet of a current surface drinking water source.</p> <p>c. During equipment storage or maintenance, the site shall be protected from leaking or dripping fuel and hazardous substances by the placement of drip pans or other surface liners designed to catch and hold fluids under the equipment, or by creating an area for storage or maintenance using an impermeable liner or other suitable containment mechanism.</p> <p>A.4.b. Mitigation measure satisfied: No fuel, hazardous substances or waste will be stored within 100 feet of a water body or 1,500 feet of a current surface drinking water source.</p> <p>A.4.c. Mitigation measure satisfied: Limited equipment maintenance may occur on pad and will be conducted above impermeable secondary containment.</p>

<p>d. During fuel or hazardous substance transfer, secondary containment or a surface liner must be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends. Appropriate spill response equipment, sufficient to respond to a spill of up to 5 gallons, must be on hand during any transfer or handling of fuel or hazardous substances. Trained personnel shall attend transfer operations at all times.</p>	<p>A.4.d. Mitigation measure satisfied: Duck ponds or bermed liners will be placed beneath connections during fuel and other fluid transfers, and fluid transfer operations will be continuously monitored. During drilling operations, a spill response connex will be staged at the pad. During any fuel or other hazardous fluid transfers, spill response equipment to clean up a minimum of a 5-gallon spill will be kept with the vehicle used for the substance transfer.</p>
<p>e. Vehicle refueling shall not occur within the annual floodplain, except as addressed and approved in the plan of operations. This measure does not apply to water-borne vessels.</p>	<p>A.4.e. Mitigation measure satisfied: No vehicle fueling will be conducted within an annual floodplain.</p>
<p>f. All independent fuel and hazardous substance containers shall be marked with the contents and the lessee's or contractor's name using paint or a permanent label.</p>	<p>A.4.f. Mitigation measure satisfied: Fuel and hazardous substance containers will be marked as required.</p>
<p>g. A freshwater aquifer monitoring well, and quarterly water quality monitoring, may be required down gradient of a permanent above-ground liquid hydrocarbon storage facility.</p>	<p>A.4.g. Mitigation measure not applicable: Facility is not an above-ground liquid hydrocarbon storage facility.</p>
<p>h. Waste from operations must be reduced, reused, or recycled to the maximum extent practicable. Garbage and domestic combustibles must be incinerated or disposed of at an approved site in accordance with 18 AAC 60. (See also Section B2, below.)</p>	<p>A.4.h. Mitigation measure satisfied: Waste will be reduced, reused, or recycled whenever practicable. During construction and drilling activities, closed top dumpsters will be on site for food trash and household waste and will be hauled away from the site regularly to prevent overfilling. Garbage will be disposed of at the Kenai Peninsula Borough landfill. Oily waste will be segregated and sent to an offsite contractor for disposal.</p>
<p>i. New solid waste disposal sites will not be approved or located on state property during the exploratory phase. Exceptions may be provided for drilling waste if the facility will comply with the applicable provisions of 18 AAC 60.</p>	<p>A.4.i. Mitigation measure not applicable: A solid waste disposal site will not be constructed for this project.</p>
<p>j. Wherever practicable, the preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection. Other methods of disposal shall be allowed only upon approval by the director, in consultation with ADEC Temporary Drilling Waste Storage plan authorization in the unlikely event drilling waste cannot be delivered directly for disposal.</p>	<p>A.4.j. Mitigation measure satisfied: Mud and cuttings generated by activities will be hauled via vacuum truck or supersucker directly from the rig process tank to an offsite, permitted underground injection disposal facility. Hilcorp will request an ADEC Temporary Drilling Waste Storage plan authorization in the unlikely event drilling waste cannot be delivered directly for disposal.</p>

5. Access	<p>a. Public access to, or use of, the lease area may not be restricted except within the immediate vicinity of drill sites, buildings, and other related facilities. Areas of restricted access must be identified in the plan of operations. Lease facilities and operations shall not be located so as to block access to or along navigable or public waters as defined in AS 38.05.965.</p>	A.5.a. Mitigation measure satisfied: Blossom Pad access will be restricted. No access to public waters is blocked.
6. Prehistoric, Historic, and Archaeological Sites	<p>a. Before the construction or placement of any gravel, or other structure, road, or facility resulting from exploration, development, or production activities, the lessee must conduct an inventory of prehistoric, historic, and archeological sites within the area affected by an activity. The inventory must include consideration of literature provided by the affected borough and local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. The inventory must also include a detailed analysis of the effects that might result from the activity.</p> <p>b. The inventory of prehistoric, historic, and archaeological sites must be submitted to the director, and to DPOR Office of History and Archaeology, who will coordinate with the affected borough for review and comment. If a prehistoric, historic, or archeological site or area could be adversely affected by a lease activity, the director, after consultation with DPOR Office of History and Archaeology and the affected borough, will direct the lessee as to the course of action to take to avoid or minimize adverse effects.</p>	<p>A.6.a. Mitigation measure satisfied: Hilcorp contracted an archaeological field survey in the project area in September 2014. The proposed pad and road will have no impact to archaeological/cultural resources. The report will be submitted to the State Historic Preservation Office (SHPO).</p> <p>A.6.b. Mitigation measure satisfied: See response to A.6.a.</p>
	<p>c. If a site, structure, or object of prehistoric, historic, or archaeological significance is discovered during lease operations, the lessee must report the discovery to the director as soon as possible. The lessee must make reasonable efforts to preserve and protect the discovered site, structure, or object from damage until the director, after consultation with DPOR Office of History and Archaeology and the affected borough, has directed the lessee as to the course of action to take for its preservation.</p>	<p>A.6.c. Mitigation measure satisfied: EH&S training includes instruction to site workers to stop work if any archaeological/historic sites or artifacts are discovered. Discovery of archeological/historic sites or artifacts will be reported as soon as possible, as required, to the appropriate agencies.</p>

7. Local Hire, Communication, and Training	
<p>a. Lessees are encouraged to employ local and Alaska residents and contractors, to the extent they are available and qualified, for work performed in the lease area. Lessees shall submit, as part of the plan of operations, a proposal detailing the means by which the lessee will comply with the measure. The proposal must include a description of the operator's plans for partnering with local communities to recruit, hire, and train local and Alaska residents and contractors. The lessee is encouraged, in formulating this proposal, to coordinate with employment and training services offered by the State of Alaska and local communities to train and recruit employees from local communities.</p>	A.7.a. Mitigation measure satisfied: 95% of Hilcorp's workforce is comprised of Alaska residents, and local contractors will be hired to the extent they are available and possess the necessary skills and training.
<p>b. A plan of operations application must describe the lessee's past and prospective efforts to communicate with local communities and interested local community groups.</p>	A.7.b. Mitigation measure satisfied: Hilcorp employees are actively engaged with regulators and stakeholders on all activities within the state. Hilcorp community outreach to date has included presentations to the Kenai Chamber of Commerce, the Alaska Support Industry Alliance, the Anchorage Chamber of Commerce, and the Cook Inlet Regional Citizens Advisory Council. Hilcorp has also participated in Ninilchik Natives Association, Inc. (NNA) board meetings to present project updates.
	Hilcorp's Alaska-based External Affairs Manager ensures that Hilcorp remains in open communication with stakeholders, regulators and the general public in Alaska. Hilcorp will continue to keep community members informed of planned activities by bulk mailings, posting targeted informational flyers in local information repositories (e.g., post offices), and evaluating projects on a case-by-case basis to hold public meetings.
	Hilcorp hosted a public meeting in Ninilchik on October 9, 2014 to discuss the company's plans for the area.
	A.7.c. Mitigation measure satisfied: Project personnel will undergo general EH&S training that includes environmental and cultural awareness topics specific to increasing understanding of local community values and customs.
	c. A plan of operations application must include a training program for all personnel including contractors and subcontractors. The program must be designed to inform each person working on the project of environmental, social, and cultural concerns that relate to that person's job. The program must use methods to ensure that personnel understand and use techniques necessary to preserve geological, archeological, and biological resources. In addition, the program must be designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating.

8. Definitions	
<p>Facilities means any structure, equipment, or improvement to the surface, whether temporary or permanent, including, but not limited to, roads, pads, pits, pipelines, power lines, generators, utilities, airstrips, wells, compressors, drill rigs, camps and buildings.</p> <p>Hazardous substance means: (A) an element or compound that, when it enters into or on the surface or subsurface land or water of the state, presents an imminent and substantial danger to the public health or welfare, or to fish, animals, vegetation, or any part of the natural habitat in which fish, animals, or wildlife may be found; or (B) a substance defined as a hazardous substance under 42 U.S.C. 9601 - 9657 (Comprehensive Environmental Response, Compensation, and Liability Act of 1980); "hazardous substance" does not include uncontaminated crude oil or uncontaminated refined oil; (AS 46.09.900).</p> <p>Identified wetlands are those areas that have been identified as wetlands by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.¹</p> <p>Minimize means to reduce adverse impacts to the smallest amount, extent, duration, size, or degree reasonable in light of the environmental, social, or economic costs of further reduction.</p> <p>Plan of operations means a lease Plan of operations under 11 AAC 83.158 and a unit Plan of operations under 11 AAC 83.346.</p> <p>Practicable means feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the standard.</p> <p>Secondary containment means an impermeable diked area or portable impermeable containment structure capable of containing 110 percent of the volume of the largest independent container. Double walled tanks do not qualify as Secondary Containment unless an exception is granted for a particular tank.</p> <p>Temporary means no more than 12 months.</p>	

¹ Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (40 CFR Parts 122.2, 230.3, and 232.2).